

## WHAT IS CLAIMED IS

1. Process for simulating a multiprocessor application placed on a target architecture, characterized in that it includes at least the following steps:
  - 5 (a) a step (E2) to prepare the simulation to produce a services graph (D3), using firstly a tasks graph (D2) and secondly a list of mechanisms and their definition (A2);
  - (b) a step (E3) to execute the simulation to determine the performance of the placed application, using a behavioral model (A3) of the target architecture and the services graph (D3).
- 10 2. Process for producing a multiprocessor application, characterized in that it includes at least the following steps:
  - (a) a step (E1) to place the application on the target architecture using firstly a functional description (D1) of said application, and secondly
  - 15 the list of resources (A1) of the target architecture in order to produce a tasks graph (D2);
  - (b) a step (E2) to prepare a simulation to produce a services graph (D3) starting firstly from a tasks graph (D2), and secondly from a list of mechanisms and their definitions (A2);
  - 20 (c) a step (E3) to execute the simulation to determine the performance of the placed application, using a behavioral model (A3) of the target architecture and the services graph (D3).
3. Process according to claim 2, characterized in that said placement step (E1) includes a partitioning step (P1) and a mapping step (P2).
- 25 4. Process according to any of the previous claims, characterized in that said simulation preparation step (E2) includes a step to create objects

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representing services, these objects being created by objects representing mechanisms.

5. Process according to any of the previous claims, characterized in that objects representing services of the target architecture are used during the step (E3) to execute the simulation, the attributes of these objects being updated during the simulation as a function of how resources are used at the simulated time.
6. Device used to create a multiprocessor application, characterized in that it includes:
- (a) a placement aid (G1) that a mapper can use to place a functionally described application on a target architecture;
  - (b) an architecture model (A3) including behavioral models of elements of the architecture;
  - (c) a simulation engine (G2), using the architecture model to determine the performance of the placed application.
7. Device according to claim 6, characterized in that said architecture model (A3) includes a generic interface independent of the target architecture that can be modified when the target architecture is modified, without modifying the placement aid (G1) and without modifying the simulation engine (G2).
8. Device according to claim 6, characterized in that it includes means of reading firstly said list of resources (A1) of the target architecture, and secondly said list of mechanisms and their definitions (A2).